



Owner's Manual

Operation and Maintenance Instructions

Wisper 906Alpino

January 2010 1st edition

Revised August 2010

We strongly recommend that you read this entire manual
before using your Wisper bike

Wisper Limited



User Guide

Introduction Page 3

Part 1 Caring for your Wisper bike and pre use checks

1	Before you set off for the first time	Page 4
2	Before each use	Page 5
3	Battery care	Page 5
4	Recharging your battery	Page 6
5	Water	Page 6
6	Maintenance and adjustments	Page 6
7	Technical specifications and performance	Page 8
8	Simple trouble shooting	Page 9

Part 2 Controls and Equipment

9	Battery on off and battery lock	Page 10
10	The LCD functions	Page 10
11	The lights	Page 12
12	Pedelec mode and assist button	Page 12
13	Throttle	Page 13
14	Brakes	Page 14
15	Handle bar stem	Page 16
16	The front connection box	Page 16
17	Quick release saddle height adjustment	Page 16
18	Rims and spokes	Page 17

19	Chain and drive wheel	Page 17
20	Gear Hub	Page 17
Warranty		Page 18
Service contacts		Page 19



Introduction

Thank for choosing a Wisper electric bicycle.

By making the decision to use an electric bike you are helping to safeguard our environment by saving our planet's precious resources and reducing carbon pollution.

Before you use your Wisper bike it is important that you read this manual carefully. If there is anything you do not understand completely please contact us.

Please observe traffic regulations, and don't lend your bicycle to anyone who is unfamiliar with it. The bicycle can only legally be used on the road by a person aged 14 years or older.

We strongly advise you to always wear a cycle helmet when using your bicycle and if you are unfamiliar with cycling to attend a cycle proficiency course prior to using it. Your Wisper Works 906Alpino is not toy and should be considered a serious mode of transport.

As with all bicycles it is important that you stay within safe limits, if you feel as if you are traveling too quickly for the road conditions you probably are so slow down.

Test your brakes prior to using the bike every time you use it and remember the bike will not stop as quickly in wet or icy conditions as it would on a dry road.

Before you use the bike for the first time you must make absolutely certain that it

has been correctly built. You can do this by either taking it to your nearest cycle engineer or if you are proficient in cycle mechanics inspecting it yourself. In particular you must make sure that the pedals, saddle, handle bars and any self assembly items have been correctly fitted.

NEVER drink alcohol and ride your electric bike. The use of alcohol greatly reduces reflexes and limits your ability to ride safely. Even a very small amount of alcohol will limit your ability to be safe on the road.

Always wear an approved cycle helmet.

When you need to replace your battery please either dispose of it properly or preferably send it back to us or our distributors and we will make sure it is properly recycled.

Happy cycling!

Wisper Ltd



Part 1 Caring for your Wisper bike and checks

Although your Wisper bike has been thoroughly tested prior to delivery, it is very important that you check the bike thoroughly before its first use. Equally important are frequent and regular spot checks they will protect you and your Wisper bike.

Please read this manual carefully. Only on full understanding of all the functions of this electric bicycle should you attempt to use it.

Your Wisper bike has been transported in a strong seven layers corrugated carton, to save space it has been delivered with the front wheel, handlebars, seat post and seat, and pedals ready for assembly with the tool kit provided.

Your retailer may have assembled your bike for you if not you will find fitting instructions on the Wisper website www.wisperbikes.com

1 Before you set off for the first time

- 1.1 Check the handle bars and handle bar stem are properly tightened
- 1.2 Check all other nuts and bolts and fixings are properly tightened, pay particular attention to the motor fixings, side kick stand, yoke and steering head bearings

- 1.3 Check brakes and brake isolators are functioning properly
- 1.4 Check tyre pressures are correct and tyres are not damaged
- 1.5 Check reflectors and lights if fitted are functioning properly
- 1.6 Make sure battery is fully charged
- 1.7 Load battery into bicycle and turn on with key
- 1.8 Press **on/off** switch to check the **battery capacity** and the **power assistance level** selected on the left hand side of the handle bars.



- 1.9 To avoid dangerous unplanned acceleration, always make sure that the electrical system is turned off. For your safety, please turn off the power key on the battery when stopped or walking the bike
- 1.10 Remember to validate your warranty by visiting www.wisperbikes.com/mywarranty and filling in your details.

2 Before each use

It is important you perform a quick check of your bike every time you use it, checks should include the following, if you find any damage or problems do not use the bike until the problem has been solved or you have had the faulty item checked by a bike mechanic or your retailer.

- 2.1 Check tyres for any visible damage
- 2.2 Check tyre pressures
- 2.3 Check for any loose nuts bolts or fixings
- 2.4 Check brake functions
- 2.5 Check electronic functions
- 2.6 Check reflectors are in place and lights are working
- 2.7 Check your battery for any visible signs of damage

3 Battery care

- 3.1 Before you use the battery for the first time it is best to give it a full deep charge for 12 hours. To fully condition your new battery give it complete deep charge, discharge cycles for the first three charges. This is achieved by charging your battery for 12 hours and then using the bike until the battery is completely drained. After this “conditioning” process you can then charge and discharge the battery as and when you require for long or short periods.
- 3.2 If you are going to leave your battery uncharged for more than eight weeks it is best left half charged. You should then re charge it every four weeks for two hours to keep it in top condition.
- 3.3 Before setting off on any journey it is always better to have a fully charged battery
- 3.4 Always remember that you use up to three times more power when setting off under the twist throttle. To preserve the life of each charge always set off using pedal assist
- 3.5 Do not expose the bicycle or battery pack to fire, heat sources, acid or alkaline substances



- 3.6 When leaving your bicycle during hot weather always leave in a shaded well ventilated area
- 3.7 For best results always recharge the battery at room temperature
- 3.8 Before unloading the battery make sure it is turned off at the key, then raise the saddle and unload the battery using its handle
- 3.9 If your battery is damaged or appears to be overheating for any reason immediately return it to your retailer for advice and a safety check

4 Recharging your battery

- 4.1 First connect the output connector plug with the battery (Refer to the recharge point picture), then connect to the mains. Make sure the charger is turned off and connect the charger to your battery then turn on the charger. Red and yellow lamps on the charger indicate the battery is charging, when the yellow light turns green the battery fully charged. Always turn off the charger and disconnect from the mains after charging. Always disconnect the charger from the mains before disconnecting the charger from the battery. It is possible that the battery will take up to 12 hours to charge on the first three charges.



- 4.2 When charging the battery always do so in a well ventilated area.
4.3 Do not leave the charger connected to the mains when not in use.

5 Water

- 5.1 Your electric bicycle is rain and splash proof and can be used in all weathers.
5.2 The electrical components of the vehicle, such as motor, battery, and controller, must not be submerged in water.

6 Maintenance and adjustments

- 6.1 **IMPORTANT!** Do not attempt to open the casings of the battery, motor or controller it could be dangerous and all warranties will become void. If you experience a problem contact our service department or your retailer.
6.2 Wheel spokes should be adjusted after 300 miles riding. Handlebar and saddle tubes should never be raised beyond the maximum indicated by a safety line around the tubes. The recommendation of the torque on the nuts as follows:
- | | |
|----------------------------|-------|
| (A) Front motor axle nuts. | 70N.M |
| (B) Back axle nuts. | 70N.M |



- | | |
|---------------------------------|---------------|
| (C) Handlebar clamp bolt. | (18 to 20)N.M |
| (D) Seat pillar clamp nut/bolt. | (5-8) N.M |
| (E) Seat clamp nuts. | 24N.M |
| (F) Gear shifter nuts. | 4N.M |
| (G) Rear carrier nuts. | 8N.M |
| (H) Mudguard bracket nuts. | 8N.M |
- Other nut torque depends on the nut size. M4: 2.5-4.0N.M M5: 4.0-6.0N.M M6: 6.0-7.5N.M
- 6.3 Your bike has a low maintenance SHIMANO 8 speed alfine gear box
6.4 The brake levers should lock the wheels when compressed half way between their open position and touching the handle bars. When they need adjusting please follows the procedure in section 14
6.5 Warning: Handlebar hand grips or tube end plugs should be replaced if damaged, as bare tube ends have been known to cause injury.
6.6 Warning: Any replacement forks must have the same rake and same tube inner diameter as the originally fitted to the bicycle.
6.7 Disc brake pad wear and replacement. Remove the brake pads and check them for wear. If they have worn to the point where the caliper piston pin-positioning hole goes all the way through, then they need to be replaced.



IMPORTANT braking distances increase on wet or icy roads.

6.8 Lubrication:

Every three months lubricate the chain with light oil



6.9 Recommended tools for proper maintenance:

Torque wrench with lb•in or N•m gradations 2, 4, 5, 6, 8 mm Allen wrenches

9, 10, 15 mm open-end wrenches 15 mm box end wrench

Socket wrench, 14, 15, and 19 mm socket T25 Torx wrench

No. 1 Phillips head screwdriver Bicycle tube patch kit, tire pump

7 Technical specifications & performance

Type	Wisper 906Alpino
Performance	(with 75kg 165lb rider)
Assisted range	8A up to 50km
	14A up to 70km
Battery only	8Ah up to 38km
	14Ah up to 50km
Maximum speed	25kph (15.5mph)
Weight with 14Ah battery	26.9kg max
Maximum load	130kg (240)

Battery specifications

Cell Type	Advanced Environmental Lithium Polymer with PCM
Capacity	8Ah or 14Ah
Rated voltage	37V

Main Controller specifications

Low voltage safeguard	31.5V
Overload current safeguard	15A

Main hub motor specifications

Motor type	Hi speed brushless
Rated power	Aus 200W / NZ Europe 250W / USA Canada 350W
Rated voltage	36V

Charger	Lithium 115 to 230V 36V fan cooled
----------------	------------------------------------

8 Simple Trouble shooting



Problem	Possible reasons	Trouble shooting
Top speed too slow	1. Low battery voltage 2. Handle bar control problem 3. Damage to motor driveline	1. Recharge battery fully 2. Call service 3. Call service
Power on but motor not working	1. Battery not connected position 2. Fused 3. Motor connection damaged 4. Handle bar control problem	1. Re install battery 2. Replace fuse 3. Call service 4. Call service
Driving shorter distance per recharge	1. Tyre pressure too low 2. Undercharge or charger fault 3. Battery capacity loss or damage 4. Hill climbing, frequent stops, strong head winds, over loading	1. Check pressures 2. Recharge completely or have charger inspected 3. Replace battery 4. Use power assist and try and avoid throttle only
LCD diagnostics	02 flashes	Motor current is too high
	03 flashes	Motor cable connection may

		be loose.
	04 flashes	Battery voltage is too low.
	05 flashes	Brake lever cut out function problem.
	07 flashes	The throttle is faulty.
	08 flashes	Controller faulty
	09 flashes	Battery output voltage is too high.

Part 2 Controls and Equipment

In this section we will describe the functions and any specific maintenance needed on all the main controls and ancillary equipment.



9 Battery on off and battery lock

9.1 Your Wisper bike has 1 set key. The key for turns the battery on/off and locks the battery in the bike. Please keep a careful note of the key numbers as we cannot replace them without these numbers should they become mislaid.



9.2 The battery is connected to the electrical system of the bike automatically when you slide the battery into the frame. To turn on the bikes electrical system, turn the key in the battery clockwise, to turn off the power turn the key anti clockwise.



9.3 When the battery has been turned on the bike is now ready for use. The ON/OFF button on the handle bar display unit isolates the power from the bike, when the bike is "on" you will see the LCD display illuminated. When the ON/OFF button is pushed and the LCD shut down you have turned the bike "off". When the bike is "off" you will not get any assistance from

the battery and motor and the bike is effectively simply an unpowered push bike.

9.4 To lock the battery into the bike frame turn the key clockwise the locking bolt holds the frame, if you want to turn the battery power on, turn clockwise again, if you want to unlock press the key and turn the key anti clockwise while the key at lock position. (Refer to the picture) Read 3 and 4 for battery care and advice on charging at the beginning of this manual.

9.5 The battery can be charged either on or off the bike.

9.6 To remove the battery turn off the power by turning the key to position

“Unlocking”, raise the seat post to its maximum height. Using the handle on top of the battery lift out the battery.

9.7 To replace the battery reverse the procedure for removing it.

10LCD function description

10.1 The LCD display has the following functions (Refer to picture below).

A: Power ON/OFF button. For details refer to the paragraph below.

B: Up (increase) adjusting button. For adjusting the pedal assistance strength, and back light brightness.

C: Down (decrease) adjusting button.

D: Set. When pressed, you can set the back light of the LCD and the



single trip distance. If you press it together with C button, you can set the bike's tyre size.

E: This shows the instant power consumption extent. A longer bar means the motor's output is higher.

F:



Battery capacity. Three bars indicate 80% capacity left, two bars indicate 70% left, one 55% capacity left, half bar 5% capacity left.

G: Instant speed figures.

H: Pedal assistance strength levels.


I: Total riding distance since last reset.


10.2 When the ON/OFF button is pushed and the capacity indicator goes out

you have turned the bike “off”. When the bike is “off” you will not get any assistance from the battery and motor and the bike is effectively simply an unpowered push bike. To turn the power back on so the pedelec and throttle work again simply press the ON/OFF button once, the capacity indicator will illuminate showing the power is on.


10.3 How to adjust functions:

10.3.1 How to adjust the pedal assistance. Refer 12.2, 12.3 and 12.4 paragraphs.

10.3.2 How to adjust the back light of the LCD. Press the “set” button once, you will see a light  symbol added under the battery capacity indicator, then press the “up arrow” to turn the back light on. The more times you press the brighter back light you will get. Refer to above picture.

10.3.3 How to read the single trip distance. Press the “set” button twice; you will see a  symbol in the left side of the screen.



10.3.4 How to read the single trip riding time. Press the “set” button three times; you will see a clock  symbol in the left side of the screen. This display does not provide the time of day – simply elapsed riding time since last reset.

11The LIGHTS

11.1 The front light is an automatic sensor light. When you turn the power on, it checks the brightness of the surroundings. It will light when you ride the bike in low light conditions. It will turn off after 30 seconds when the ambient light increases.

11.2 The rear light is also automatic. The sensor point is from front light.



12 Pedelec mode and ASSIST mode

- 12.1 When you first ride your 906Alpino you will notice that after one turn of the pedals the motor will start working assisting you ride the bike by adding power to the front wheel. This is the standard or pedelec mode, to continue using the pedelec mode you must keep turning the pedals, if you stop the motor will stop and the bike will slow to a halt. If you start pedaling again after one turn the motor will start again.
- 12.2 You will find the ASSIST level shows on the LCD display. You can adjust the assistance strength by pressing the up or down arrow. There are 6 levels of assistance (40%/50%/60%/70%/90%/100%) .
- 12.3 70%, 90% and 100% mode are generally used when you need a greater amount of assistance from the motor. 60% mode is used when you do not need the instant power of 90% or 100%. 40% and 50% are used in high traffic situations or poor conditions such as ice and snow when 70%, 90% and 100% power immediately could be dangerous.
- 12.4 Power consumption. When you increase the assistance, you will find the battery range is reduced

13 Throttle

- 13.1 The throttle can be used independently to the pedelec mode but the operation will vary depending on the country where the bike is supplied. Bikes are set up to be legal in the region in which they are supplied and will either provide full power (100%) or power up to 4 mph (6kph) (walkalong mode) independently of the pedelec.
- 13.2 The independent use of the throttle, when available, will enable you to use the throttle without pedaling. However to achieve optimum performance and life from the motor it is recommended that large throttle openings from rest be avoided and that where possible pedal assistance should be used when starting the bike from rest.
- 13.3 The use of the throttle in pedelec mode is legal in most countries. Throttle in pedelec mode enables you to turn up the power to the motor as long as you are pedaling the bike, if you stop pedaling the motor will stop too. If you have the pedelec mode set too Low, you can increase the assistance from the motor from 40% to 100% of available power simply by turning the throttle towards you.

IMPORTANT Make sure your throttle grip and the grip on the left hand side of your handle bars are always intact, in good condition and on the bike. Uncovered handlebar tubes can be very dangerous in case of a collision. Ensure the spacer fitted between the throttle and the grip is properly installed

14 Brakes

- 14.1 Front: Disc Rear: disc
- 14.2 The brakes on your Wisper bike are fitted with cut outs which are required by law. This means that when you pull on either the back or front brake lever the motor immediately stops working.
- 14.3 Details of how to adjust and maintain your brakes are as follows:
Once a month, inspect brake pads and blocks for wear. If they have reached the wear limit then replace the items.

Front disc:

Mechanical disc brakes offer several advantages over traditional rim brakes better braking in wet, muddy or other adverse conditions, less braking power fade over extended downhill braking and the ability to continue braking even if your rim becomes bent or distorted.

14.3.1. Adjust the pads and caliper

- 14.3.1.1. Use a 3mm Allen wrench to adjust the stationary caliper adjusting bolt at the back (hub side) of the caliper. Adjust the bolt so that there is 0.3mm clearance between the stationary (hub side) pad and the rotor.



- 14.3.1.2. Adjust the cable tension to the desired modulation by tightening/loosing the tension modulation adjuster bolt on the caliper with 5mm Allen wrench



- 14.3.1.3. Adjust the cable adjuster bolt on the caliper so that there is 0.3mm clearance between the outside pad and the rotor. Turn this bolt in a clockwise



direction to provide more clearance, and anti-clockwise for less clearance.

14.3.2. Removing and installing pads.

Caution: The pads and rotor must be kept clean and free from oil or grease based contamination. If the pads become contaminated you must discard them and replace them with a new set. A contaminated rotor should be cleaned with brake cleaning solvent and dried.

14.3.2.1. Unscrew caliper's two screws fixed in front fork. Pads can be removed by releasing the pin which goes through the pads and then manoeuvring the pads out of the rotor slot. Straighten the pin or replace with a new item if damaged.

14.3.2.2. Holding the pad end-tab, insert it into caliper slot with its metal backing towards the piston. Make sure the hole in the metal backing goes over the piston pins. When correctly inserted, the pad will be held in place magnetically, repeat for the other pad following the reverse procedure.

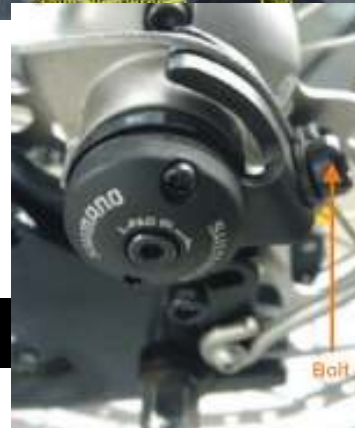


Rear brakes:

14.3.3. Adjust the pads and caliper

14.3.3.1. Use a 3mm Allen wrench to adjust the stationary caliper adjusting bolt at the back (hub side) of the caliper. Adjust the bolt so that there is 0.3mm clearance between the stationary (hub side) pad and the rotor.

14.3.3.2. Adjust the cable tension to the desired modulation by tightening/loosing the tension modulation adjuster bolt on the caliper with 5mm Allen wrench



14.3.3.3. Use a 3mm Allen wrench(Refer to picture) to adjust the left side caliper's pad 0.3mm clearance between the rotor.



14.3.4. Removing and installing pads.

14.3.4.1. Unscrew two caliper screws fixed in the rear fork. Remove the clip(Refer 14.3.3.1 picture), and then unscrew the bolt shown in the picture. Then manoeuvre the pads out of the rotor slot.



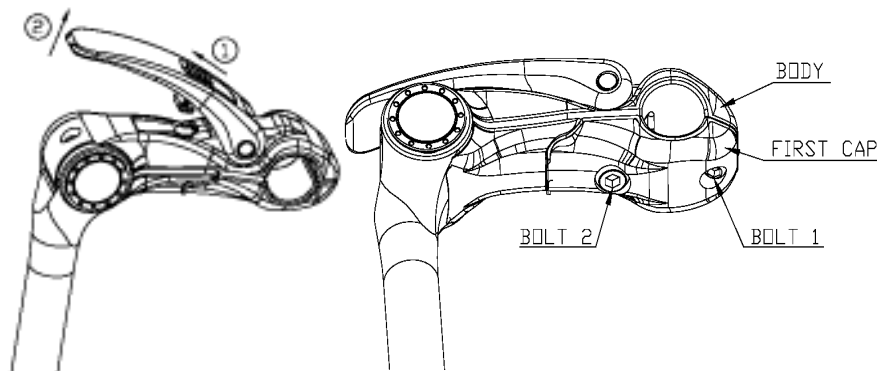
14.3.4.2. Holding the pad end-tab, insert it into caliper slot with its metal backing towards the piston. Make sure the hole in the metal



backing goes over the piston pins. When correctly inserted, the pad will be held in place magnetically, repeat the procedure for the other pad.

Warning: If you are unsure about any part of the installation process you should seek advice from Wisper service center or qualified mechanic.

15 Stem handle bar clamp



- 15.1 Your bike has been fitted with a quick release handlebar clamp that allows you to change the position of the bars quickly and easily to find the most comfortable riding position.
- 15.2 The stem and handle bars need to be fitted before you use the bike.
- 15.3 To fit, insert the stem into the front tube at least to the position of the "Minimum insertion" mark.
- 15.4 Tighten the quill bolt and fix stem.
- 14.5 Push in the direction of the arrow slide cap 1 and lift lever 2.
- 15.6 Adjust stem to preferred angle and lightly tighten BOLT 1 then BOLT 2

to a suitable position so that the slide cap 1 will fit when locked, then press down lever 2 to lock the handle bars in position.

- 15.7 Test the bars to make certain they are tight and do not rotate. If they are not tight enough, release lever 1, lift lever 2, adjust BOLT 2 again then press down lever 2. Repeat until the handle bars are tight and safe.

IMPORTANT when fitting always adjust Bolt 1 first so the body and cap touch then Bolt 2.

16 The front connection box

- 16.1 The front connection box allows for the easy removal for repair or replacement of any of the electronic components on the handle bars. Please ensure no wires are trapped between the two halves when reassembling and do not over tighten the 4 screws.



17 Quick release saddle height adjustment

- 17.1 Your Wisper bike has been fitted with a quick release saddle post collar to facilitate the movement of the saddle to remove the battery or to change the riding position. Always ensure the collar is fully engaged on the seat tube.
- 17.2 It is important that the nut on the collar is tightened so the post will be gripped in the bike tube firmly. Make this adjustment with the quick release lever in the open position.
- 17.3 Adjust the seat to the correct height and close the lever. When you sit on the saddle there should be no vertical movement at all in the saddle post.

IMPORTANT never raise the saddle past the point where the maximum marks on

the
saddle post are visible above the quick release collar

18 Rims and spokes

- 18.1 It is essential to have your spokes checked and tightened after 300 miles. This is a free service provided by your supplier. If this service has not been undertaken at the correct time this may cause damage to the wheels and spokes that will not covered under our guarantee.

19 Chain and drive wheel

- 20.1 The chain and drive wheel are made from rust proof materials.
20.2 Lightly oil with bicycle chain oil at least once a month.

20 Gear hub

- 21.1 Your Wisper bike with the premium quality 8 speed SHIMANO Alfine gear box. You can adjust it by the rapid fire shift lever even when the bike is stationary. Under normal conditions no maintenance is required.



Warranty

Repair or replacement of components

IMPORTANT To validate this Warranty the retail customer must register the bike at www.wisperbikes/mywarranty within 14 days of purchase.

Only use this product in accordance with this user manual. We offer a limited warranty of on the following items.

1	The main frame	Six years
2	Gears, bearings, motor shell, hub motor, front forks	Two years
3	Handle bar controls, brakes (excluding brake shoes and pads)	One year
4	Controller and Charger	Two years
5	Battery casing, battery leak, battery capacity step-down more than 25%	Two year
6	Paintwork (excluding deliberate or accidental damage)	Two years

7	Front and rear axle, chain wheel	One year
8	Electro plating, on wheel rims, rack and kickstand	Six months
9	Other cases that render the bike unsafe to use.	By negotiation

1. If the product has a quality fault within 15 days of delivery the part will be repaired or replaced or in exceptional circumstances we may replace the whole vehicle.
2. The period of assurance shall commence from the day delivery was made to the retail customer, or from the day the retail customer collected the bike from the retailer.
3. To validate this Warranty the retail customer must register his / her bike at www.wisperbikes/mywarranty within 14 days of purchase.

Exceptions to Limited Warranties

1. Damage resulting from misuse, not maintaining the vehicle or not following the guidelines within this user guide
2. Accidental or deliberate damage
3. Damage due to private repair or alteration by user or unauthorised service centre.
4. Failure to produce invoice or proof of purchase.



5. Spare parts and components worn in normal use.
6. Failure to register your bike at www.wisperbikes/mywarranty within 14 days of purchase.

It is essential to have your spokes checked and tightened after 300 miles. This is a free service provided by your supplier. If this service has not been undertaken at the correct time this may cause damage to the wheels and spokes that will not covered under our guarantee.

Service through

Your retailer

or
Wisper Ltd
10 Oakenbrow
Sway
Hants
SO41 6DY
Tele:01590 681553
Mobile:07977 185830
douglas.lawson@wisperbikes.com
www.wisperbikes.com

Copyright January 2010 Wisper Ltd